

Amendment to the Claims:

1. (Cancelled)

2. (Currently Amended) ~~The A method of claim 1, wherein of~~
magnetic resonance imaging comprising the steps of:

a) providing a magnetic field within an imaging volume,

b) moving a subject continuously along a predetermined path
5 passing through the imaging volume,

c) defining a sub-volume of the imaging volume that moves
together with the subject, the sub-volume [[is]] being a slab, and the slab being
selected with an extension along the predetermined path relative to an extension along
the predetermined path of the image volume such that the time of movement of the
10 slab across the imaging volume is sufficient for magnetic resonance image data
acquisition of the slab with a predefined resolution,

d) performing a magnetic resonance image data acquisition for
the slab while the slab remains within and moves continuously relative to the imaging
volume, the magnetic resonance image data acquisition being a three-dimensional
15 imaging method used for the step of magnetic resonance image data acquisition which
includes applying gradient pulses that define [[a]] the slab which slab moves with the
subject;

e) after completing the data acquisition for the slab, defining a
subsequent slab which neighbors the slab on the predetermined path and performing a
20 subsequent step of magnetic resonance image data acquisition for the subsequent slab
as the subject and the subsequent slab move together continuously through the
imaging volume.

3. (Cancelled)

4. (Currently Amended) The method of claim [[1]] 2, wherein the
~~sub-volume~~ slab has an extension along the predetermined path between 3 and 7 cm.

5. (Currently Amended) The method of claim [[1]] 2, wherein the speed of movement being is between 0.5 and 5 mm per second.

6. (Currently Amended) The method of claim [[1]] 2, ~~whereby~~ wherein the magnetic resonance image data acquisition is performed by means of a parallel imaging technique.

7. (Currently Amended) The method of claim 6 ~~whereby~~ wherein a SENSE-type parallel imaging technique is used.

8. (Currently Amended) The method of claim [[1]] 2, wherein the magnetic resonance image data acquisition being is cyclically repeated, ~~whereby such that~~ one repetition is performed for each one of the sub-volumes slabs with the data acquisition for each slab being completed before starting the data acquisition for the subsequent slab.

9. (Currently Amended) The method of claim [[1]] 2, wherein each of the sub-volumes having slabs has a first extension along the predetermined path, the imaging volume having a second extension along the predetermined path, the second extension being at least twice the first extension.

10. (Currently Amended) A computer readable medium containing instructions for controlling a computer system for magnetic resonance imaging comprising:

5 [[-]] within a magnetic resonance sequence including a gradient pulse sequence, defining a sub-volume of an imaging volume provided by a magnetic field, adjusting the pulse sequence to continuously move [[a]] the sub-volume along a predetermined path across the imaging volume together with a subject, and performing magnetic resonance image data acquisition for the sub-volume as [[it]] the sub-volume moves together with the subject, the sub-volume being selected such that
10 the time of movement [[of]] for the sub-volume within to traverse the imaging volume is sufficient for the performing of the magnetic resonance image data acquisition to

acquire a full set of imaging data for reconstruction into an image with a preferred preselected resolution, and

15 [[-]]within the magnetic resonance sequence, after acquiring the full set of image data for the sub-volume, defining a subsequent sub-volume which ~~neighbours~~ neighbors the sub-volume on the predetermined path and adjusting the gradient pulse sequence to perform a subsequent step of magnetic resonance image data acquisition from the subsequent sub-volume as the subsequent sub-volume traverses the imaging volume and as the subject and the subsequent sub-volume
20 moves together continuously.

11. (Currently Amended) The computer readable medium of claim 10, wherein the program means being adapted to be employed for magnetic resonance sequence employs a parallel imaging technique.

12. (Currently Amended) A magnetic resonance imaging device comprising:

a magnet system configured to generate a magnetic field within an imaging volume;

5 a subject support configured for moving a subject continuously along a predetermined path through the imaging volume; and

a control unit configured for generating of control signals for magnetic resonance image data acquisition within a sub-volume of the imaging volume, the sub-volume being moved along the predetermined path along with the subject, the
10 sub-volume being selected such that the time of movement ~~[[of]]~~ for the sub-volume ~~within~~ to track across the imaging volume is sufficient for magnetic resonance image data acquisition with a predefined resolution and for subsequent magnetic resonance image data acquisition within a subsequent sub-volume which ~~neighbours~~ neighbors the sub-volume on the predetermined path wherein data acquisition for each sub-
15 volume is completed before data acquisition for a subsequent sub-volume is commenced.

13. (Currently Amended) The magnetic resonance imaging device of claim 12, wherein the subject support ~~being~~ is configured to move the subject with a speed of 0.5 to 5 mm per second.

14. (Currently Amended) The magnetic resonance imaging device of claim 12 further comprising means for performing a parallel imaging technique based on simultaneous reception through multiple receive channels from the sub-volume as the sub-volume tracks across the imaging volume and subsequently from the
5 subsequent sub-volume as the subsequent sub-volume tracks across the image volume.

15. (Currently Amended) The magnetic resonance imaging device of claim 12, wherein the control unit ~~being~~ is configured to perform cyclic repetitions of the magnetic resonance image data acquisition sequentially, in a non-interleaved fashion, for a plurality of sub-volumes.

16. (Currently Amended) The magnetic resonance imaging device of claim 12, wherein the sub-volumes ~~having~~ each have a first length along the predetermined path and the imaging volume ~~having~~ has a second length along the predetermined path, the second length being at least twice the first length.

17. (Currently Amended) The magnetic resonance imaging device of claim 12, wherein the predetermined path ~~being~~ is a straight line and the magnet system ~~comprising~~ includes a cylindrical magnet.

18. (Currently Amended) The method of claim [[1]] 2, wherein the predetermined path ~~being~~ is curved.

19. (Currently Amended) The method of claim [[1]] 2, further comprising:

correcting the acquired magnetic resonance image data for zero order phase error accumulated due to the continuous moving.

20. (Currently Amended) The method of claim ~~[[1]]~~ 2, further comprising:

processing the acquired magnetic resonance image data to form an image of ~~a subject section to be imaged~~ at least a portion of at least one of the slabs;

5 and

visualizing the image ~~of the subject section.~~